*Setting-based Metacognitive Strategy Use** *
(A Qualitative and Quantitative Examination)

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Abstract

This article aims to explore a context-bound and methodologically-oriented metacognitive strategy use (MSU). To this end, two major questions converted into respective null hypotheses were raised. The study was carried out in the Iranian educational context conventionally categorized into three settings of: authoritarian, semi-democratic and democratic, due to the varying existing educational policies and planning. The participants (N=180), homogenized based on their scores on TOEFL, answered the Mastegognitive Strategy Questionnaire by Item Type (MSQIT) (Purpura, 1999) version of the Strategy Inventory of Language Learning (SILL) and Good Language Learner's Questionnaire (GLLQ), and did two language tasks accompanied with a video-taped think-aloud protocol on MSU. Both qualitative and quantitative analyses were run. The findings revealed unexpected results in a sense that some underlying aspects attributed to MSU were explored which confirmed the fact that conventional quantitative statistical analysis relying on just statistical significance cannot be convincing enough to explore the construct of metacognition as a subcategory of cognitive phenomena. The study not only showed some statistical significance of MSU in relation to educational setting type but also the qualitative approach led to the exploration of certain sub-strategies and metacognitive processing. The findings also showed that certain subcategories of metacognitive strategies (MS) are more context-bound than the others, confirming the fact that type and degree of MSU are subject to educational setting type. The implications of the study are of both theoretical and practical in nature on: (1) the nature of MS, (2) research methods, (3) curriculum development, (4) classroom management, and (5) individualized instructions.

Key words: Metacognitive Strategies, Educational Setting, and Qualitative & Quantitative Research

Introduction

In recent years, there has been a growing interest in general research on the mental images, thoughts, and processes L2/FL learners and teachers employ while they learn or teach, respectively. Their mental processes provide "**interpretative frames**" used to understand and approach their own learning and teaching"(Richards, 1996, p.1). In this process, both groups develop their own personal principles functioning like rules for best behavior or maxims. This trend has entailed, as Hismanoglu (2000) says,"a prominent shift within the field of language learning and teaching over the last 20 years with greater emphasis being put on learners and learning rather than on teachers and teaching." Then, how of information processing and kinds of strategies used by learners to understand, learn or remember the information have been the major concerns of foreign language learning researchers. What adds to the peculiarity of the issue is the setting or context in which language education is carried out. Then, in a certain educational setting analogous to social settings certain policies, behaviors, interactions of any type supposedly affecting learner's learning strategies are experienced.

Thought as higher order thinking, metacognitive activities enable us to be successful learners (e.g., Borkwoski, Carr & Pressley, 1987; Stenberg, 1984, 1986a 1986b). It thus seems crucial to explore the construct of matacognition in determining how learners can be taught to apply the cognitive resources. This study aims to explore an understanding of the MS in three supposedly various educational situations.

Clarifications on Strategies

Etymologically, coming from the ancient Greek term 'Strategia', the word 'strategy' means generalship or art of war. More specifically, it "… involves the optimal management of troops, ships, or aircrafts in a planned campaign" (Oxford, 1990, p.7). Sometimes, it is used interchangeably with a related word "tactics". Basically, two categories of strategy pertinent to this study are:

Learning strategies: are defined as general steps taken by students to enhance their own learning and as the way students learn a wide range of subjects from native language reading through electronics troubleshooting to new languages"(ibid, p.2).

Metacognitive strategies: as Oxford believes (1990, p.136), is something "beyond, besides, or with the cognitive knowledge" can be defined (a)..... knowledge and control one has over one's thinking and learning. (Brown, 1987), (b).... one's knowledge concerning one's cognitive processes and products or anything related to them, e.g., the learning of relevant properties of information or data (Flavell, 1976,p.232), or as Anderson believes(c): "thinking about thinking"(2002).

THEORETICAL BACKGROUND

The origin of research into language learning strategies dates back to the 1960s, when the developments in cognitive psychology imposed then influences on the research on the issue (Hismanoglu, 2000). Most of the research on this area "is either Descriptive studies or Intervention studies (Macaro, 2001, p.72). The former category has attempted to

define: 1)"the features of a good language learner, 2) the total number of strategies learners (or group of learners) use, and 3) the composition of strategy use between one group and another group of learners". The latter category, however, has "attempted to discover whether it is possible to bring about change in strategy use in learners through, in most cases, a process of learner training by the teacher or researchers" (ibid.). Then, these studies play another descriptive role; describing the process of teachers helping students to "learn to learn".

Descriptive studies

In most of the research on language learning strategies, the primary concern has been on identifying what good language learners report they do or learn a second or foreign language (Rubin and Wenden 1987). As a first attempt on learner strategies, Tarone Carton (1977) did a study entitled " The Method of Inference in Foreign Language Study" followed by that of Rubin (1987) who started doing research on the strategies of successful learners. Naiman et al (1978) did a research study, which focused on personality traits, cognitive styles and strategies (Wenden, 1991, p.19). They (1996) also made a study entitled "The Good Language Learner". A more comprehensive study by O'Malley and Chamot (1990, p.19) resulted in identifying metacognitive strategies and offering a new classification of MS. Chamot and Kupper's (1989) study focused on integrative use of the learning strategies by the good language learner. Chamot, Kupper, O'Malley and others, focussed on the learning behaviors of successful adult language learners. Wong-Fillmore (1976) identified social strategies used by successful language learners. Bialystok (1981) revealed the effects of the use of two fundamental strategies-inferring and

functional strategies and two formal strategies: monitoring and formal practicing. Tarone (1977) paid much attention on the communication strategies of second language learners. Hosenfeld (1977) made studies on reading strategies and reported on a MS. Cohen and Aphek (1981) studied vocabulary learning strategies, which found eleven categories of associations utilized by students. More specifically, Wenden (1987,p.22) clarified " the importance of metacognitive knowledge in second language learning which resulted in identification of five areas of metacognitive knowledge: the language, student performance, outcome of students' learning endeavors, the students' role in the language learning process and how best to approach the task of language learning". Wenden's research has contributed important insights on metacognition in L2 learning, namely, what learners know about their L2 learning and how they plan it (a regulatory process). Lingua studies (Macaro, 2001,pp.74-83) on the strategies used by learners learning language in different contexts, studies on the level of proficiency and MS (O'Malley et al), reading and listening studies in relation to the nature and type of learning strategies used, and more specifically the studies on learning strategy use in relation to various independent variables by Eharm and Oxford (1989), Bacon (1992), Bugel and Buunk (1996) and Macaro (1998) and some others by Carrell (1989), Marilda Caralcanti (1987) , Suzzane Graham(1997), O'malley and Chamot(1990), Susan Bacon (1992) and Thompson and Rubin (1996) have enriched the literature.

Intervention studies

Along with the trend of descriptive to empirical studies , several classification schemes have been used to group, analyze, and evaluate these studies (e.g., Cavanaugh & Perlmutter, 1982; Kluwe, 1982; Schoenfeld, 1987; Schneider, 1985), which showed three general categories of: (1) of cognitive monitoring (Kluwe, 1982; Schonfeld, 1987), (2) regulation of one's own thinking processes (Kluwe, 1982, p.210) and Schneider, 1985), and (3) monitoring and regulation (Kluwe, 1982; Schonefeld, 1987, Schneider, 1987). A goal of these studies is to discover what and how much people know about memory that is relevant to performance of a particular memory task (Cavanaugh & Perlmutter, 1982).

Intervention studies are concerned with the mechanism of bringing about better strategy use and better language learning (Macaro2001, p.107). Then these studies" are intervening usually through a process of raising the awareness of the learners and/or submitting them to a program of strategy training"(ibid.). Major studies in this area are confined to certain aspects such as: strategies for reception strategy conducted by Vandergrift (1997), Roost and Ross (1991), Lynch (1995) and Dadour and Robbins (1996) training for interaction, (2) memorizing language by Rod Ellis (1994, p. 553), Cohen and Aphek (1981), Chamot and Barnhardt, El Dinary and Robnins (1996), Brown and Perry (1991) and Oxford (1990, p.43).

Metacognition in Education

More recently, a fourth category of metacognitive research has been developed on the educational relevance that metacognitive theory has for teachers and students (Borkowski and Muthukrishna ,1992,p.479) and Paris and Winograd (1990,p.15) who argue that "students can enhance their learning by becoming aware of their own thinking as they read, write, and solve problems in school. In general, metacognitive theory focuses on (a) the choice of awareness and executive management of one's thinking, (b) individual differences in self-appraisal and management of cognitive development and learning, (c) knowledge and executive abilities that develop through experience, and (d) constructive and strategic thinking (Paris & Winograd, 1990). However, no concrete studies seem to have been conducted on how MS are realized in various educational settings.

The Problem and Purpose

The problem to be tackled in this study is twofold: theoretical and methodological. The former area is concerned with MSU under various educational contexts in terms of both quantity and quality, trying to explore whether the degree and number of MSU vary as educational situation varies. The latter aspect, however, is concerned with the assumption that multiple aspects of MS require multiple instrumentations and research methodologies of both qualitative and quantitative in nature.

Characteristics and Significance of the Variables

Analogous to the issue of the problem and purpose, the variables involved are also twofold: MSU and Language Learning Settings (LLS).

A. Metacognitive Strategies (MS): They are defined as " higher order executive skills that may entail planning for, monitoring, or evaluating the success of activity" (O'Malley & Chamot, 1990, p.44), they give us precious clues about how our students assess the situation, plan and select appropriate skills in a better possible way. Lessard-Clouston (1997, p.3) associates language learning strategies with the development of the communicative competence. Furthermore, Oxford (1990, p.1) believes that learning strategies "…are specially important for language learning because they are tools for activities, self- directed movement, which is essential for developing communicative competence". Furthermore, MS characterized in the acronym of CAPE standing for: 1) Centering your learning, 2) Arranging and planning your learning, and 3) Evaluating your learning (Oxford, 1990, p.136),"allow learners to control their own cognition-that is to coordinate the learning process by using functions such as centering, arranging, planning, and evaluating " (ibid, p.135). They support and manage language learning without directly involving the target language. Being too associated with cognitive theory, metacognition is called "thinking about thinking". (Anderson, 2002). Learners who are metacognitively aware know what to do when they do not know what to do; that is they have strategies for finding out what they need to do"(ibid). The development of metacognitive ability is educationally so significant that education failure or success correlates with it. It is taken that "children who are active and effective learners readily use metacognitive processes when encountering learning

situations, while children at risk of academic failure have a pervasive ignorance concerning active learning and effective intervention"(Brown, 1987, p.50).

B. Language Learning Setting (LLS): Nothing can be learned in vacuum. Nothing can also make sense if it is devoid of its context. As Oxford's says "we can not ignore the educational or pedagogical environment in which that the teacher is operating whenever he considers the frequency of use and deployment of language learning strategies that learners are involving themselves" (in Macaro, 2001,p.33).

Any educational context/setting, and more specifically the Iranian current setting, (thereafter, taken interchangeable) usually resembles a continuum characterized by two extremes of educational management approaches as: authoritarian and democratic (i.e., openness) ones. Of course, some moderate versions lie in between somewhere on the continuum. For the purpose of this study, these states are conventionally classified under three categories; authoritarian, democratic and semi-democratic contexts each of which characterized by various management policies exercised by both teachers and learners. Under **authoritarian** context discipline, theoretically, means "strict rules and harsh punishment "(Keith Brown, 1999). Here the teacher tries or is usually forced to " establish himself or herself as the absolute authority in the class…ends to unjustly reward students that fit the mould and punishes those that do not" (Harmer, 1983, pp. 209-210). It is then characterized by teacher-centeredness, less flexibility, relatively non-humanistic. **Semi-democratic** characterizes a situation in which the relationship is:

reciprocal, non-repressive, non-discriminatory, and there are accountability, humanity, consistency, clarity, respect, and reasonable firmness. Therefore, it is a moderate state laying somewhere on an educational continuum. Contrary to common presupposition from its conventional definitions, **democratic setting** in Iran is characterised as a situation under which (1) freedom is not associated with accountability in terms of either institutional formalities or expectations from the learners, (2) formalities are denigrated by both the institutes themselves and then by the learners, and (3) there are much more flexibilities and applications of much conservative policies and considerations.

Research Questions

The main research questions raised are:

1. Does educational context type have any impact on the quality or the amount of metacognitive strategy use?

2. Does educational context type have any impact on the quantity or the frequency of matacognitive strategies supposed to be used by language learners?

Research Hypotheses

However to find answer to the questions, they were converted into two separate null hypotheses as follows:

1. Educational context type does not have any impact on the quality or amount of metacognitive strategy use.

2. Educational context type does not have any impact on the quantity or the frequency of metacognitive strategies supposed to be used by language learners.

RESEARCH METHODOLOGY

Subjects

Subjects of the study were 180 students selected from among the Iranian students doing their English conversation courses under the three already identified educational contexts. A general proficiency test of the 1999 version of TOEFL was first administered to about 300 subjects (100 from each setting) so as to homogenize them in terms of proficiency level in the target contexts. Then, based on the normal probability distribution curve, they were divided into three distinct groups on the basis of their positions on the curve; under $-1SD$, between -1 and $+1SD$ or over $+1SD$.Out of those who were standing between $-1SD$ and $+1SD$ 180 (60 from each setting) were selected.

Design of the Study

The present study was conducted on the basis of an ex post facto design as the distinction between the dependent and independent variables in this study appeared to be arbitrary rather than a rule-governed one. It is justified on the grounds sustained by Hatch and Farhady in saying that "ex post facto designs are often used when the researcher does not have control over the selection and manipulation of the independent variables"(1982, p.26).

Instrumentation

Given the examination approaches, the instruments employed in this study included: 1) the 40-item MQSIT (Purpura, 1999) (Appendix A) and 20-item GLLQ (Wenden, 1987) (Appendix B) administered in their Persian versions (Macaro, 2000, p.67) that the former one addressed MSU but the latter one tackled global language learning strategies, 2) Two Language tasks in the forms of a 13-item verb task exercise and report-writing task(see Appendices C, D, E, and F for both the texts and MSU questions). For the former one the subjects filled in correct verb forms but for the latter one they were required to be in the shoes of a traffic police officer in developing a car accident report to the office. Upon the completion of both tasks, they were assigned to answer eight questions on MSU pertinent to each task, 3) Think-aloud protocol: for which they were interviewed on MSU through a video-taped "semi-structured retrospective interview" (Macaro, 2000, p.56) composed of items selected from the MSQIT.

Procedure

The data collected through the questionnaires were converted into numerical value based on Likert Scale. All written answers as well as those expressed orally for the Think-aloud Protocol were mapped in terms of the concepts used for both quantitative and qualitative analyses.

Data Analysis

To find out the interrelationship between the observed and latent variables, first structural equation modeling (SEM), sustained and advised

and initially employed by Purpura(1999, p.3), was utilized. However, out of various rotated models, none of them was found as the fit model representing the expected relationship. Then, both quantitative and qualitative analyses on the bases of descriptive statistics, ANOVA, the Scheffe test, and factor analysis on one hand , and concept mapping on the other were conducted (reported in due section).The descriptive statistics addressed frequency calculation to determine overall MS patterns. Mean scores among groups on each variable were compared on the bases of ANOVA, but in order to determine where specific significant differences lay, a standard post hoc test, i.e., the Scheffe was utilized. Furthermore, following Green and Oxford (1995, p. 261-97), factor analysis was conducted to : (1) derive underlying factors and their ladings, (2) amount for the amount and number of variability, and (3) provide evidence for the construct validation of the trait.

RESULTS and DISCUSSIONS

To test the hypotheses, descriptive statistics of the collected data were analyzed. However, the data emanating from the think-aloud protocol of the interview went through a qualitative analysis. The inferential statistics including correlational analyses, one-way and two-way ANOVAs, Multiple-comparisons Scheffe Test, and factor analyses were carried out.

Analysis No.1 (*Descriptive Statistics for Dependent-Independent Variables Relationships*)

Due to bulky nature, the table of Descriptive Statistics characterized by the data on 10 dependent variables is not presented here; however, it, in fact, comprises the descriptive statistics for each dependent variable including the metacognitive strategy types (i.e., planning, monitoring, and evaluation), Good Language Learners' Questionnaire, performance in the written-protocols (i.e., the Verb exercise and Written Report). A comparison of MSU mean scores across the learner groups in the educational settings under the study showed that use of planning strategy had roughly an equal frequency among the subjects, but monitoring and evaluation strategies had the lowest frequency use under the democratic setting. Then, in terms of MSU, the democratic setting had totally the lowest MSU frequency. As to the Good Language Learners' Strategy Use, two extremes of the continuum amazingly enjoyed similar frequencies. Similarly, the democratic setting was characterised by the lowest frequency in the verb exercise task planning strategy. Nevertheless, no distinct differences could be reported as to the use of the verb exercise task evaluation strategy.

As far as the written-report task was concerned, again the democratic setting revealed the lowest frequencies both in planning and monitoring strategies, while the authoritarian setting was characterised by the highest frequency of evaluation strategy. In totality, the democratic setting showed the least frequency in terms of MSU in the written-report task. Generally, the descriptive statistics showed an equal performance by the subjects learning under the authoritarian and democratic settings.

Analysis No.2

In order to compare several group means simultaneously, the one-way ANOVA was run. Analogous to the Analysis No.1, data on the dependent and independent variables were analysed to test the first and second hypotheses. Based on Table 1.1 the F-observed values pertinent to all of the dependent variables on the first left column of the table including MSU-planning, monitoring, and evaluation, Good Language Learners' Strategy Questionnaire, the Verb and Written tasks both involving all three types of MS except the Verb exercise planning MSU were much lower than the F-critical values. However, the F-observed value 9.41 at 2 and 177 degrees of freedom on the Verb exercise planning MSU (as the only significant difference reported here) compared to its pertinent F-critical and the level of significance proved to have the mean difference significant at p.05 level.

Table 1.1
ONE-WAY ANOVA

Dependent Variables	Educational Setting Groups	Sum of Squares	Df	Mean Square	F	Sig.
VERB-PLAN	Between Group	10.000	2	157.284	*9.419	*.000
	Within Group	2670	177	16.698		
	Total	2680	179			

Analysis No.3 (Post hoc Comparisons; Schefee Test)

Due to lack of strong empirical reasons to expect certain differences among the groups or in other words and lack of consistent support for the

hypotheses in the literature, attempts were made to resort to post hoc comparisons. Then, Multiple Comparisons Schefee Test –the most commonly used and the most conservative test of all – was utilised. The mean differences among the independent variables were cross-compared. As Table 2.1 presents, it was only in the Verb exercise planning MSU that statistically significant mean differences were reported. However, range of non-significant mean differences revealed some interesting trends to be discussed in details in their due sections.

Table 2.1
Multiple Comparisons Scheffe

DEPENDENT VARIALES	(I)EDUATIONAL SETTING	(J) EDUCATIONAL SETTING	Mean Difference (I-J)	Std. Error	Sig.	95%Confidence Interval	
						Lower bound	Upper bound
VERB-PLAN	Semi-democratic	Democratic	3.0000*	.7461	.000	1.158	4.842
		Authoritarian	.4444	.7461	.838	-1.397	2.286
	Democratic	Semi-democratic	-3.0000*	.7461	.000	-4.842	-1.158
		Authoritarian	-2.5556*	.7461	.003	-4.397	-.714
	Authoritarian	Semi-democratic	-.4444	.7461	.838	2.286	1.397
		Democratic	2.5556*	.7461	.003	.714	4.397

Analysis No.4 (Think-aloud Protocol) [Qualitative Analysis]

The data on the think-aloud protocol (questions used for the Protocol were randomly selected out of MSQIT but frequency of items belonging to triple strategy types including: planning, monitoring and

evaluation was observed) were analysed first from the frequency of use perspectives then in term of the nature of MS. Tables 3.1.A, B and C present the mapped concepts or better to say the sub-strategies in terms of ranked frequency.

Table 3.1.A
DEMOCRATIC SETTING

PLANNING		MONITORING						EVALUATION					
Plan for doing task	F	While Doing	F	Addressee Effect	F	Test Taking	F	Improve Learning	F	Progress Check	F	Error Treatment	F
Think over	6	Mental practice	11	Simplify	10	Item Rew.	11	Practice-Rept	14	Reading	10	Avoidance	8
Review	6	Meaning	6	Strategy change	7	Immd Start	6	Review	5	Speaking	7	Compensation	8
Mental Rep.	4	Schemata	6	Body L	7	Accuracy	4	Mental Processing	4	Word	5	Welcome	8
Concentration	4	Form	4	Word Change	3	Scoring	4	Self-telling	3	Translation	4	Priority	2
Think in L1		Form & Meaning	3	Structure Change	3	Orderly Answ	2	Pair-Telling	2	Film L	4	Focus more	2
Immediate Start	3					Item Obj	2	Word Knowldg	2			Laugh at	2
Seek Assist	2					Ignore Scoring	1						
Reference	2												

Table 3.1.B
SEMI-DEMOCRATIC SETTING

PLANNING		MONITORING						EVALUATION					
Plan for doing task	**F**	**While Doing**	**F**	**Addressee Effect**	**F**	**Test Taking**	**F**	**Improve Learning**	**F**	**Progress Check**	**F**	**Error Treatment**	**F**
Think	8	Objectives	8	L level/Position	15	Review	9	Repetition	12	Speaking	9	Concentration	7
Mental Rep	8	Mental Processing	6	Word use	8	Mental Arrangement	6	Post-review	12	Scores	6	Think over	7
Mental Conn	6	What	6	Addressee Type	7	Orderly Answer	4	No measure	6	Commun ability	3	Compensatin	7
Review	5	Form	5			Information Connt	3			Word Power	3	Learn More	5
Pre-study	3	Meaning	5			Meaning Analysis	2			Self-Confidence	3	Review	4
						Pre-study	2			Self-Expression	3		
						Scoring	2			Film L	3		
						Objevtives	2						
						Thinking	2						

Table 3.1.C
AUTHORITARIAN SETTING

PLANNING		MONITORING						EVALUATION					
Plan for doing task	**F**	**While Doing**	**F**	**Addressee Effect**	**F**	**Test Taking**	**F**	**Improve Learning**	**F**	**Progress Check**	**F**	**Error Treatment**	**F**
Think over	8	Think over Meaning	12	Style	12	Scoring	8	Repetition	10	Speaking	10	Compeneation	9
Review	5	Form	6	Rank	8	Scoring& Answer	7	Realistic Use	6	Reading	10	Avoidance	5
Mental Translation	5	Objectives	6	Gist	5	Review	4	Margin Notes	5	Word Power	4	Welcome	5
General Understanding	5	Meaning& Form	4	Easy Word	5	Easy-Difficult	4	Note-Taking	5	Linguistic Knowledge	4	Morwe Focus	5
General Meaning	5	Mental Rep.	2			Knowledg Review	4	Mental Review	5	Pronunciation	2	Laugh at	3
Mental Rep	2					Translation	1					No Measures	3
						Orderly Answering	1						
						Objectives	1						
						Cues	1						

Furthermore, a cross-comparison of the sub-strategies coded as common among all of the settings (+), common between two of the

settings (=), and specific to individual setting (*) is presented in tables 3.1.D. 1 & 2 in order to facilitate visualizing an emerging pattern.

Table 3.1.D.1
Metacognitive Strategy Use
Cross Comparison

EDUCATIONAL SETTING	PLANNING		MONITORING					
	Before Doing	*F*	*While Doing*	*F*	*Addressee Effect*	*F*	*Test Taking*	*F*
DEMOCRATIC	+Think	6	*Mental Practice*	11	*Simplify*	10	+Review	11
	+Review	6	+Meaning	6	*Strg. Chng.*	7	*Immd. Start*	6
	+Mental Rep.	4	*Schema*.	6	*Body L*	7	*Accuracy*	4
	Concet.	4	+Form	4	+Word Chng.	3	+Scoring	4
	L1 Think	3	+Form-Meaning	3	*Strat. Chng.*	3	+Orderly	2
	Immd. Start	3					+Objct.	2
	Seek asst.	2					*No Score*	1
	Ref.	2						
SEMI-DEMOCRATIC	+Think	8	+Meaning	5	+Word Chng.	8	+Review	9
	+Review	5	+Form	5	*L level-Post.*	15	+Scoring	2
	+Mental Rep.	8	=Objct.	8	*Class*	7	+Orderly	4
	Mental Conn.	6	*Mental Procss.*	6			+Objct.	2
	Pre-study	3	*What*	6			*Mental arrng.*	6
							Infm. Connct.	3
							Mean.Arrng.	2
							Pre-study	2
							Think	2
AUTHORITARIAN	+Think	8	+Form	6	+Word Chng.	5	+Review	4
	+Review	5	=Form-Meaning	4	*Style Chng.*	12	+Scoring	8
	+Mental Rep.	2	=Objct.	6	*Rank*	8	+Orderly	1
	Mental Trans.	5	+Think Mean.	12	*Gist Saying*	5	+Objct.	1
	General Unds.	5	*Mental rep.*	2			+Scoring	7
	General Mean.	5					*Easy-Diff.*	4
							Knwlg. Review	4
							Cues.	1
							Trans.	1

Cont……..……

Table 3.1.D.2

Metacognitive Strategy Use

Cross-comparison

Educational Setting	EVALUATION					
	Improve Learning	*F*	*Progress Check*	*F*	*Error Treatment*	*F*
Democratic	+Practice-epetition	14	=Reading	10	=Avoidance	8
	=Review	5	+Speaking	7	+Compensation	8
	Mental rocessing	4	+Word Power	5	*Welcome*	8
	Self-telling	3	*Translation Ability*	*4*	*Priority*	2
	Pear-telling	2	=Film L	4	+Concentration	2
	Word knowledge	2			=Laugh at	2
Semi-Democratic	+Repetition	12	+Speaking	9	+Concentration	7
	=Review	12	+Word Power	3	*Think over*	7
	No Measure	6	=Film L	3	+Compensation	**7**
			Scores	*6*	*Further Learning*	5
			Self-confidence	*3*	*Review*	4
			Self-expression	*3*		
Authoritarian	+Repetition	10	=Reading	10	=Avoidance	5
	Realistic use	6	+Speaking	10	+Compensation	9
	Margin Notes	5	+Word Power	4	=Welcome	5
	Note-Taking	5	*Linguistic Knowledge*	4	+Concentration	5
	Mental Review	5	*Pronunciation*	2	=Laugh at	3
					No Measure	3

+Common Strategy Use

*Specific Strategy Use

=Common between Two

Emerging Patterns

What emerges from the data is a specific trend characterizing each of the settings in terms of MSU.It means that, while there are a number of common sub-strategies among all three settings and some sub-strategies specifying two of the settings, there emerge certain sub-strategies (coded * and highlighted here) identified as "setting-oriented sub-strategies" specifying individual setting differentiate each setting from the two others. The following frame reveals the claimed trend:

I. Democratic

1- planning: concentration, thinking in L1, immediate start, seeking assistance, resort to reference books, 2-monitoring: mental practice, schemata use, simplify, strategy change, body language use, structure change, immediate start, array, non-importance of test scores, 3-evaluation: translation ability, priority to correct errors.

II. Semi-democratic

1-planning: creating mental connection, pre-study, 2-monitoring: mental processing, trying to know what, mental arrangement, information connection, mental arrangement, pre-study, 3-evaluation: no-measure, scores as progress indication, self-confidence, self-expression, thinking over the errors, further learning, and review.

III. Authoritarian

1-planning: mental translation, general understanding, general meaning, 2-monitoring: mental representation, style change, attention on military rank, focus on the gist, taking easy-difficult strategy, knowledge

review, and using the cues, 3-evaluation: good pronunciation, and no-measure strategy with regard to the errors. The remaining sub-strategies are shared by two of the setting as the table shows, which are not presented here.

Pattern Indications

Basically not only did some of the metacognitive sub-strategies and thereby the strategies differ in terms of their frequency of use in each educational settings, but also some were found different in terms of their nature. Descriptively, then, certain sub-strategies, though common among the educational settings, were characterized by not only different frequencies e.g., "think" (planning),"meaning"(monitoring) but also different nature of the construct, as a trend contributing to making comments on , if not rejecting, the hypotheses under study. These patterns and their indications are in line with those of the analysis No.1 based on which both frequency and type of MS are fundamentally educational setting-oriented in nature.

Analysis No.5 (Factor Analysis)

Theoretically, there could be ten distinct factors equal to the number of the dependent variables or the components under the factor analyses. To extract the assumed underlying factors, Principle Component Analysis along with varimax rotation with Kaiser Normalisatinton was used first to avoid the extraction of only ten first factors (Farhady, 1983) and also to make the factors as interpretable as possible. Since some of the factors did not show high loadings (greater

than 0.30) to be interpretable, the analyses were constrained to four-factor solution at all the settings. Though equal number of factor solutions identified the settings, the results showed different patterns of factor loadings as reported in tables 4.5.A., B., and C.

In addition to the different proportions of these factors for each dependent variable and the dispersion of factor ladings, these patterns offer evidence for the specific underlying strategies employed under each setting. As these tables show, the contribution made by these factors to each educational setting is quite different.

According to Table 4.5.A. there are heavy loadings on factor 1 from MSU evaluation, planning, Good Language Learner's Strategy Questionnaire, and monitoring, respectively in terms of proportions. But the written-evaluation, written-monitoring, and written- planning loaded more on factor 2(the last one loaded roughly equal on factors 2 and 3). The verb-evaluation and verb planning had a bit similar distribution on factor 4, though the latter one resembled similar position as the verb monitoring.

Table 4.5.A
Democratic Setting

Rotated Component Matrix (a)				
DEPENDENT VARIABLES	**Component**			
	1	**2**	**3**	**4**
MCSUEVALUATION	.837			
MCSUPLAN	.825			
GOODLL	.818			
MCSUMONITORING	.609			
WRITEEVALUATION		.869		
WRITEMONITORING		.699		
WRITEPALN		.599	.423	
VERBMONITORING			.895	
VERBEVALUATION				.886
VERBPLAN			.541	.598

It means that cross-comparison of the factor loadings and distribution had different patterns both in terms of factor proportions and loadings. In other words, the realities of the MS explored through factor analyses reveled to be a bit different under different educational settings.

Table 4.5.B presents a different pattern as to the loadings distribution. Though the loadings on the first factor had the same components as those of the democratic setting, the rank characrerised by proportions showed different pattern. On the 2nd factor the component

position changes i.e., the written-monitoring in the democratic setting was replaced by the verb-evaluation in the semi-democratic setting. Similar trends extended to whatever factor loading could be seen in factor 3 and 4. It means that cross-comparison of the factor loadings and distribution had different patterns both in terms of factor proportions and loadings. In other words, the realities of the MS explored through factor analyses revealed to be a bit different under different educational settings.

Table No.4.5.B
Semi-democratic Setting

Rotated Component Matrix (a)				
DEPENDENT VARIABLES	Component			
	1	2	3	4
MCSUPLAN	.843			
GOODLL	.842			
MCSUEVALUATION	.791			
MCSUMONITORING	.647			
WRITEEVALUATION		.862		
VERBEVALUATION		.754		
VERBPLAN			.774	.323
WRITEPALN			.751	
VERBMONITORING				.727
WRITEMONITORING		.353		.722

Based on Table 4.5.C same components had loading on factor 1, though their distribution and proportion were never the same under different settings. On the other hand, loadings on factors 2 and 3 did   not

only prove quite diverse, but also enjoyed quite rank orders. Interestingly, they extracted as to the authoritarian setting, which indicated both the nature of the group members and the MSU of only three factors.

Table 4.5.C
Authoritarian Setting

Rotated Component Matrix (a)			
DEPENDENT VARIABLES	**Component**		
	1	**2**	**3**
MCSUEVALUATION	.896		
GOODLL	.889		
MCSUPLAN	.834		
MCSUMONITORING	.630		
VERBEVALUATION		.833	
VERBMONITORING		.678	
VERBPLAN	.339	.644	
WRITEEVALUATION		.618	
WRITEMONITORING			.852
WRITEPALN		.398	.559

Then, clearly a similar pattern like that of the Think-aloud Protocol emerges since each MS enjoyed a bit different significance or utility in each setting. Therefore, the contributions by these factors to each educational setting type are quite different. Accordingly, the data analysed qualitatively and quantitavely helped the researcher to make comments that each research approach can shed light on certain aspects of

MS or an attribute, though not to talk of statistical rejection of, on the hypotheses.

CONCLUSIONS AND IMPLICATIONS

The Research Hypotheses: The Entire-group Analyses

Analyses No.1 and 2 showed that different types of MS enjoyed varied frequency of use among the subjects. On the other hand, subjects under some educational setting outperformed the two others. Then, it seemed possible to rank the settings in terms of the frequency of MSU to the extent that in very rare cases learners' identical performance. However, the descriptive statistics exposed the democratic setting in the lowest performance level in MSU.

Table 5.1
Frequency of MSU by Educational Setting Type

Dependent Variables	Educational Setting Rank		
	Semi-democratic	Democratic	Authoritarian
MSU Total	2	3	1
Good L Learners' Strategies	3	2	1
Verb Task Total	2	3	1
Writing Task Total	1	3	2

Even the setting groups showed a bit different performance with regard to each of the dependent variables to the extent that in e.g., the verb exercise planning strategy proved statistically significant mean

scores. Analysis No. 3 also presented another significant level between some of the groups under the educational settings. On the other hand, the current interrelationships among the dependent variables indicated a new trend of movement in MSU among the educational setting learner groups.

Analysis No. 4 also showed sub-strategies categorized conventionally into common sub-strategies among all setting groups. Although the assumed trend of movement in the hypotheses in MSU from the democratic to authoritarian was not proved, the results of this analysis proved the critical role of educational setting type in the manifestation of MS in terms of both quality and quantity as MS not only were different in their nature but in terms of their frequency of use depending on the educational setting type.

The Analysis of factorial models was a further contribution to the findings of the Think-aloud Protocol as certain dependent variables loaded more on certain factors on the one hand, and variant distribution patterning on the other hand contributed to the justifiable characteristics of the hypothesis-makings. Then, cross- comparison of the factor loadings, their distribution, and more importantly the factorial modeling differences among the educational settings i.e., three-factor solution in the authoritarian setting but four-factor-solution in the two other settings were further indications to the interrelationships between MSU and educational setting type.

Summary of Findings

1. Psychometrically, mean differences were in very few cases significant but nature of the study and the findings justify the double-approach examination, proving the fact that in exploring MSU the nature and characteristics of measurement instruments have to be taken into account since some methods or instruments can better realize the nature of the trait and never can a single instrument explore the underlying reality of such complex and individualized construct.

2. A trend on MSU was opened based on which MSU was shown to be affected to some degrees by educational setting type.

3. It does make some significant and clear qualitative and quantitative difference if learners learn under certain educational contexts.

4.Some aspects of MS are more situation-bound than the others in that some strategies of metacognition are better realized under certain educational settings, as was the case of writing report evaluation strategy under the authoritarian setting,

Theoretical Implications (The nature of MSU)

Theoretially, this study has provided several insights on the nature of MSU:

1. MSU was a one-dimensional construct consisting of a single set of assessment processes. In other words, strategies such as planning for,

monitoring, and evaluation, often thought as separate metacognitive strategies all form part of one underlying construct involving assessment.

2. MSU, measured through various measurements devices here, is an artifact of methodological developments or design.

3. MSU showed, on average, variant parameters in their models across the target educational settings, though not statistically significant in some cases.

4. MSU is rather complex in its underlying reality as measured by think-aloud protocol and factorial modeling analysis since each strategy was characterized by particular sub-strategies on the one hand, and variant distributions, ranks and proportions in factor loadings specific to each learning or educational setting on the other.

5. MSU is basically affected by the nature of learner group being more integrated under the influence of the educational setting type or doing its academic carrier without accounting for the institutional considerations which partially affect the nature of the group thinking and thereby their MSU.

6. MSU is not a matter of either-or- process, but it is a subject of range or quality of use.

7. The study revealed certain sub-strategies under each MS type, indicating complex nature of human thought and information-processing nature.

8. Also, the underlying factorial structure of MSU varied across educational setting, confirming relatively situation-bound nature of MS.

Pedagogical Implications

The pedagogical findings of the study could:

1. Inform our teachers about how second language MSU can be interpreted within a system of human information-processing and how these settings might contribute to "good" MSU and thereby might contribute to "good" performance in a number of contexts.

2. Inform us on whether our focus or direction in language education has been on the right path or not. If not, offer us new orientations in language planning, syllabus design, and lesson planning and individual classroom management:

A. Curriculum development

The findings of this study offer some useful hints to the educational planners, policy-makers, curriculum developers at macro-planning levels to reconsider the current educational trend in general and language education in particular from the democratically-oriented and privately-run system towards more moderate path.

B. Classroom management

We teachers should be teaching MS explicitly and incorporating them into lessons whenever appropriate and pay more attention on the learner's MS characteristics in their progress evaluation, arousing test taking awareness. On the other hand, we need to observe the learner's variables, classroom composition and educational setting type, as MSU is not only an individualized trait but also learning atmosphere as a launching pad contributes to their optimum production. Therefore, individualized instruction along with group dynamics has to be incorporated in our teaching carrier.

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Appendices

Appendix A
MSQIT Version of SILL Questionnaire (English Version)

0   1   2   3   4   5

(0)Never   (2) Sometimes   (4) Usually

(1)Rarely   (3) Often   (5) Always

Goal Setting Processes (GS)

Process	Strategy	Item
GS	GS43	When I begin studying English, I plan what I am doing to do so I can use my time well.
GS	GS53	I set goals for myself in language learning.
GS	GS54	I think about whether I am making progress in learning English.
GS	GS56	When I am learning a new language, I think about how well I want to learn it.
GS	GS80	When I am taking an English class, I think about my final goals.

Planning Processes (PL)

Process	Strategy	Item
PL	FPL48	I try to understand the purpose of activities in my English class.
PL	FPL59	When someone is speaking English, I try to concentrate on what the person is saying.
PL	FPL64	When I am taking an English test, I try to concentrate on what I am doing.
PL	FPL78	Before I begin an English assignment, I make sure I have a dictionary or other resources.
PL	FPL79	Before I write a composition in English, I plan my work.
LLRN	LLRN45	I think about how I learn languages best.
LLRN	LLRN70	I try to find out all I can about language learning by reading books or articles.
LLRN	LLRN77	I know what helps me remember new words in English.

Assessment Processes (ASS)

Process	Strategy	Item
ASS	ASIT41	Before I use my English, I think about whether my grammar is good enough to express my ideas.
ASS	ASIT42	Before I begin an English test, I try to see which parts will be easy and which parts will be difficult.
ASS	ASIT58	Before I begin an English test, I think about how the test will be scored.
ASS	ASIT63	Before I begin an English test, I think about which parts of the test are the most important.
ASS	ASIT65	Before I begin an English assignment, I think about whether I know enough English to do it.
ASS	ASIT66	Before I begin an English test, I decide how important it is for me to get a good grade on the test.
ASS	ASIT67	Before I use my English, I think about how I can ask for help if I do not express myself clearly or if I do not know a word.
ASS	ASIT72	Before I talk to someone in English, I think about how much the person knows about what I am going to say.
ASS	MON44	When I speak English, I know what I need to change so that people will understand me.
ASS	MON47	Before I hand in my English test, I check my work.
ASS	MON49	When I listen to English, I realise when I have not understood something.
ASS	MON52	When I am speaking English, I know when I have not pronounced something correctly.
ASS	MON55	When I am taking an English test, I know how much time has gone by.
ASS	MON57	When I speak English, I recognise when I have said something that sounds a native speaker.
ASS	MON60	When I speak English, I know when I make grammar mistakes.
ASS	MON68	When I listen to English, I recognise other people's grammar mistakes.
ASS	MON75	When I speak English, I know when someone does not understand something I said.
ASS	EVAL46	When I have learned a new word or phrase in English, I test myself to make sure I have memorised it.
ASS	EVAL51	I test my knowledge of English words by using them in new situations.
ASS	EVAL61	I test my knowledge of English grammar rule by applying them in new situations.
ASS	EVAL62	After I have taken a test in English, I think about how I can do better the next time.
ASS	EVAL69	I try to learn from the mistakes I make in English.
ASS	EVAL71	After I finish a conversation in English, I think about how I could say things better.
ASS	EVAL73	After I say something in English, I think about how I could say the thing better.
ASS	MON74	When someone dos not understand my English, I try to understand what I said wrong.
ASS	MON74	When I have learned a new English grammar rule, I test myself to make sure I know how to use it.
ASS	EVAL76	After I learn something in English, I test myself to make sure I have rally learned it.

Source: Adapted from James E. Purpura, 1999, pp.224-6

Appendix B
Wenden's Retrospective Self-Report Questionnaire
of Good Language Learners' Strategies (English Version)

Circle the answer that describes how you approach language learning.

A: Always   O: Often   S: Sometimes   R: Rarely   N: Never

The good language learner finds a style of learning that suits his/her

1. I try to get something out of every learning situation even if I do not like.

   A   O   S   R   N

2. I choose learning situations that are suited to my way of learning.

   A   O   S   R   N

Good language learners are actively involved in the language learning process.

3. Besides language class, I plan activities that give me a chance to use and learn the language.

   A   O   S   R   N

4. I choose activities because I am already familiar with the ideas.

   A   O   S   R   N

5. I can figure out my special problems.

   A   O   S   R   N

6. I try to do something about my special problems.

   A   O   S   R   N

7. I do things I don't usually do to gain more information about English.

   A   O   S   R   N

Good language learners try to figure out how the language works.

8. I pay special attention to pronunciation.

   A   O   S   R   N

9. I pay special attention to grammar.

   A   O   S   R   N

10. I pay special attention to vocabulary.

   A   O   S   R   N

Good language learners know that language is used to communicate.

11. I try to develop good techniques to practice listening, speaking, reading, and writing.

    A   O   S   R   N

12. I try to develop good techniques to improve my pronunciation, grammar, and vocabulary.

    A   O   S   R   N

Good language learners are like good detectives.

13. I am like a detective. I look for clues that will help me understand how language works.

    A   O   S   R   N

14. When I don't know I guess.

    A   O   S   R   N

15. I ask people to correct me if I make a mistake.

    A   O   S   R   N

16. I compare what I say with what others say to see if I'm using correct English.

    A   O   S   R   N

17. I think about what I've learned.

    A   O   S   R   N

Good language learners learn to think in the language.

18. I try to think in English.

    A   O   S   R   N

Good language learners try to overcome their feelings of frustration and lack of confidence.

19. I overcome my feelings of frustration and lack of confidence.

    A   O   S   R   N

20. I can laugh at my mistakes.

    A   O   S   R   N

Adapted from Wenden, 1991(who had adopted it from Naiman et al., 1978)

Appendix C*
Verb-Exercise Task Text

Direction: **Supply the simple present or the present progressive form of the verb. In a few sentences either form may be used.**

Example : a. The milk (taste) ----tasts-------sour.

        b.She (taste---------is tasting-------the soup to see if it needs more salt.

       c.The wind (blow)-----is blowing------very hard outside.

   1. The play (begin)--------------now.

   2. She (try)--------------to finish her work early today.

   3.It (get)------------------coldedr and colder.

   4.I (hope)------------to see you again.

   5. We (plan)------------to buy a house soon.

   6.Children (learn)-------------faster when they are intertested in what they (study) ----------------.

   7.We (go)--------------to the movies tonight.

   8. The sun (rise)-------------in the east and (set)-----------in the west.

   9.I sometimes (forget)--------------to take my keys when I (leave)-----------the house.

   10. She (take)------------a nap every afternoon.

   11. I (hear)----------------------some loud noise outside.

   12. He (listen)-----------to radio.

   13. I (see)-------------some children outside.

* From Modern English : Exercises for Speakers : Part I. Parts of Speech (p.48) by M. Frank, 1972, Englewood Cliffs, NJ : Prentice Hall.

Appendix D
Verb-Exercise Task MSU Questions (Persian Version)

بکارگیری استراتژیهای فراشناختی

سؤالات انجام فعالیت زبانی کاربرد افعال

لطفاً به سؤالات ذیل جواب کامل و توضیحی بدهید .(سوالات فقط مربوط به فعالیت زبانی است که چند لحظه پیش انجام دادید):

۱. قبل از جواب دادن و پر کردن جاهای خالی، آیا برنامهریزی خاصی انجام دادید؟

۲. چگونه به جواب و پاسخ صحیح مناسب «جاهای خالی» میرسیدید؟

۳. به هنگام انجام کار آیا مکث ، توقف و یا شک میکردید؟ چرا؟

۴. چگونه در کار خود تجدیدنظر کرده و به چه علت گاهاً بعضی از پاسخها را پاک کرده و مجدداً مینوشتید؟ چگونه برای بار دوم یا سوم به پاسخ ظاهراً درستتر میرسیدید؟

۵. اگر با یک روش خاص به پاسخ درست نمیرسیدید، یا شک میکردید، آن وقت چه تدبیری میاندیشید؟ مثال بزنید؟

۶. آیا به هنگام انجام کار، یعنی در حین انجام آن تأمل میکردید؟ چرا؟

۷. پس از اتمام کار و قبل از تحویل نهایی آن چه کار میکردید؟

۸. از ارتباط جملات سرنخهای متنی چه استفادهای میبردید؟

Appendix E*
Written-Report Task Text
The Traffic Officer

You are a traffic officer. As part of your job, you must file a report of accidents you covered while on duty in order to submit it to your high ranking officer. Yesterday, you were on the scene of an auto accident that took place on a country road. You now need to file a report of that accident.

Task:

Write a report of the accident. The following information is what you wrote down in your note pad. Use this information to write your report on what happened yesterday. Be certain to make clear the sequence of events.

1. Time: 7:20 A.M., April 14

2. Place: Highway 652, two miles south of the city

3. An overturned Volkswagen on the shoulder of the southbound lane

4. Skid marks leading from the southbound lane to the Volkswagen

5. A pickup truck blocking the northbound lane of traffic

6. Skid marks going from the southbound lane into the northbound lane (leading to the pickup truck)

7. Front of a Chevrolet station wagon smashed against the side of the pickup truck.
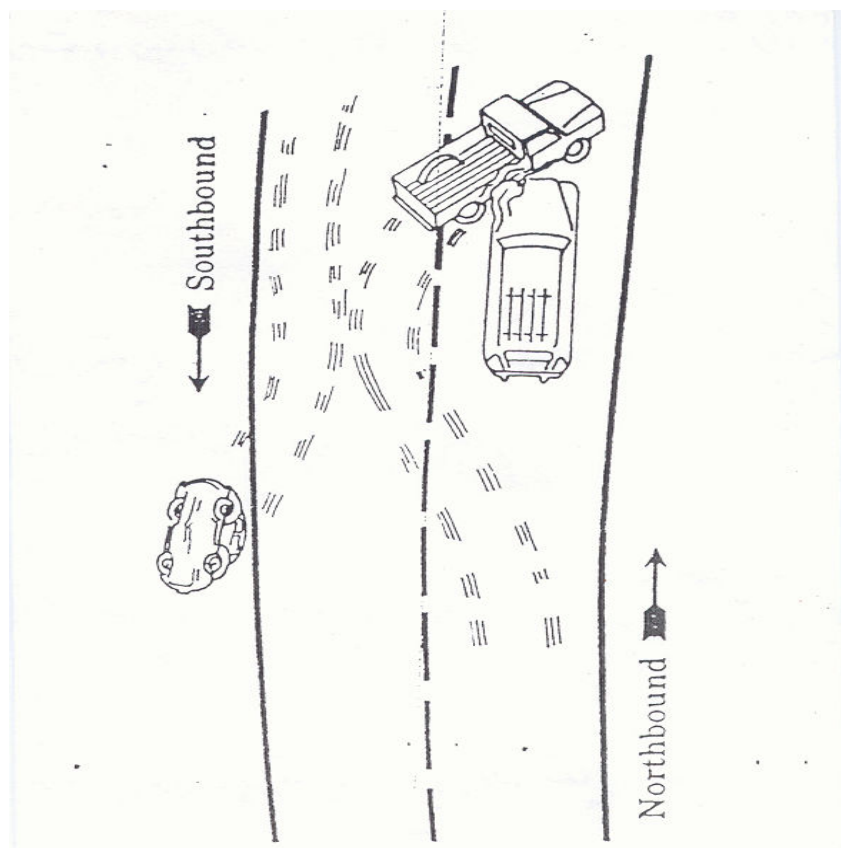
*From Writing for a Specific Purpose (p.47) by S. McKay and L. Rosenthal, 1980, Englewood Cliffs, NJ. Prentice Hall.

Appendix F

Written-Report Task Text MSU Questions (Persian Version)
بکارگیری استراتژیهای فراشناختی

سؤالات گزارش کتبی

<u>خواهشمند است به سوالات زیر در ارتباط با گزارشی که نوشتید،پاسخ کامل دهید:</u>

۱. قبل از نوشتن گزارش آیا برای آن برنامه‌ریزی خاصی انجام دادید؟

۲. آیا به هنگام نوشتن مکث یا توقف می‌کردید؟ چرا؟

۳. آیا موردی پیش آمد که واژه، عبارت یا جمله‌ای را خط زده و دوباره شـکل متفـاوت آن را بنویسید؟ چرا؟

۴. آیا به هنگام نوشتن نسبت به موضوع و کار در دست انجام اصلاً فکر می‌کردید؟ اگر پاسـخ مثبت است چه تأثیری روی نوشتن شما داشت؟

۵. به هنگام نوشتن چه چیزهایی برایتان حائز اهمیـت بـود؟ (خـوش خطـی و خوانـا بـودن، انتــقال صحیح معنا، جمـلات دستوری درست، زیبایی کار، ارتبـاط منطقـی مـتن، سـلیس و روان بودن و ...) لطفاً علت را بیان کنید؟

۶. آیا به هنگام نوشتن و یا قبل از مبادرت به نوشتن به نوع خواننده یا مخاطب فکر کردیـد؟ نوع مخاطب فرضی چه تأثیری روی نوشتن شما داشت؟

۷. آیا سعی داشتید تا مخاطب نوشتار شما را خوب بفهمد؟ برای ایـن کـار چـه تـدبیری بـه هنگام نوشتن می‌اندیشید؟

۸. پس از پایان نوشتن گزارش و قبل از تحویل برگه چه کار کردید؟